

BUREAU OF WATER

South Carolina Department of Health and Environmental Control

SC DHEC BEACH GRANT

SEMI-ANNUAL UPDATE

Prepared for:

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Region 4 Office
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South Carolina Department of Health
and Environmental Control

www.scdhec.gov/beach

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I. Introduction

The purpose of this report is to provide the U.S. Environmental Protection Agency (EPA) with updated information concerning South Carolina's Ocean Water Monitoring and Notification Program. This report covers activities that have taken place since the last semi-annual update submitted November 2008.

II. Functions of the Program

The goal of the Ocean Water Monitoring and Notification Program is to allow the public to make informed decisions concerning recreating in waters presenting a potential for adverse health effects. To carry out this goal, DHEC regularly monitors ocean water quality and issues swim advisories as necessary. SCDHEC staff includes a program coordinator – Shannon Berry, and an IT support person – Liz Florom, both located in Columbia; 1 regional coordinator in each of our 3 coastal regions: Sean Torrens - Myrtle Beach, Harvey Wilkins - Charleston, and Dave Payne – Beaufort. Additional sample takers and laboratory staff who analyze the samples support the program from the regional offices.

III. Program Accomplishments

A. Documentation

SCDHEC's Ocean Water Quality Monitoring and Notification Program booklet was modified in March 2008 and posted on our Web site at a revised address: www.scdhec.gov/beach.

The Web site has been updated to reflect new documents including the above named booklet and a new bookmark. The DHEC Art Department developed the logo – *Stay Well in the Water* for this public notification effort.

B. Training and Presentations

Shannon Berry attended the National Beaches Conference in April. She made 2 presentations: *Sanitary Surveys in Marine Waters in South Carolina*, and *The History and Remediation of Stormwater Outfalls in Horry County*. Sean Torrens was very helpful in preparing both presentations. Tom Garigen, Stormwater Manager of Horry County, also provided information about and inspections of his projects in the County. Pictures of the projects can be seen in Section E. Region Activities – Region 6.

Ted Ambrose and Shannon Berry attended the Ocean Monitoring in South Carolina workshop sponsored by SCDHEC- OCRM, South Carolina Sea Grant Consortium, and the Southeast Coastal Ocean Observing Regional Association on April 27th. Ted spoke about the ocean water quality monitoring program. The invitation to the meeting is in Appendix A.

C. Data

Routine sanitary surveys of the stations and beaches below are planned for 2009. The form can be found in Appendix B.

We are not surveying every beach or every station this year; we are “getting our feet wet.” Due to hiring freezes and other state budget cuts, back-up personnel are not available this year to support our beach sampling efforts. Therefore, we are surveying those areas we can with the resources currently in place. At the end of this season, we will evaluate the effort and plan for 2010. It is our goal to do a routine survey at every station next year and to begin the annual surveys. The number of surveys will be determined over the winter of 2009-2010.

Sanitary survey Schedule for 2009

Region 6

- Briar Cliff Acres WAC-009A, 010, and 011
- Myrtle Beach WAC-020
- HC – Garden City WAC-036 and 037
- Garden City Point WAC-038
- Georgetown Co. Beaches WAC-039-040
- Litchfield Beach WAC-041, 042 and 043A
- Pawley’s Island WAC-044A, 045A, and 046
- Debordieu WAC-047 and 048

Region 7

- Sullivan’s Island TRI-057, 058 and 059
- Seabrook Island TRI-073 and 074

Region 8

- Harbor Island LC-083, 084, 085 and 085A
- Fripp Island LC-092, 093, 094, 095, and 096.

D. Public Notification

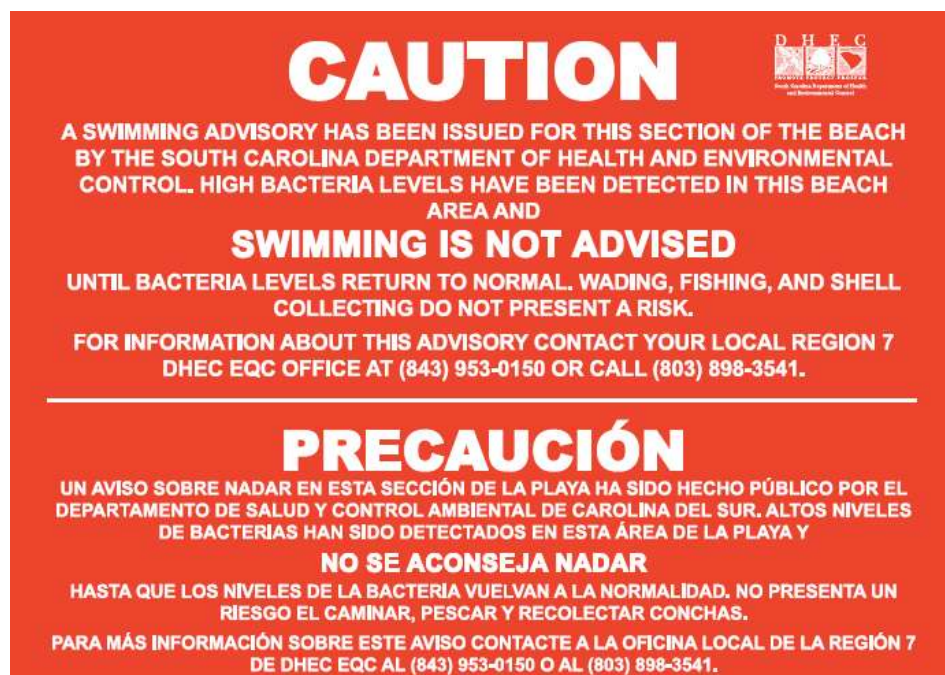
In an effort to be more proactive, the BEACH Grant program and the Office of Media Relations are working together to put out our state’s ocean water quality report prior to the coming season. This report was posted to the Web site in December 2008 for the 2009 sampling season. Results will be posted on the DHEC Web site monthly.

In an effort to be more consistent across the Regions, Adam Myrick of DHEC’s Office of Media Relations helped develop a standard advisory form for distribution to local news outlets. That document is in Appendix C. The Region program managers, along with Adam Myrick, developed a template for issuing news releases for advisories. When an advisory needs to be

issued, the program manager will complete the template and forward it to Adam. Adam will then release it to the appropriate news outlets and post it to DHEC's Web site. In Region 6 where we may need to advise due to rainfall, Sean Torrens may also send out releases to the local media as these advisories are not issued based on sampling and frequently happen after normal business hours. Copies of all advisories will be sent to the BEACH program coordinator in Columbia.

Appendix D is a news release sent out by DHEC to announce the start of the beach sampling and advisory season.

New advisory signs were purchased. The signs are in English and in Spanish. Each region received signs. Below is an example of the sign for Region 7. It is lightweight and has its own stand. Signs have been delivered to the Region offices who, in turn, have elected to give signs to some of the cities to post.



In past years, DHEC has linked to the earth911 Web site to post our current advisories. This site has been taken down. The Information Systems staff in the Bureau of Water, led by David Adcock, plan to recreate this same information format on DHEC's beach Web site. The site will have a map displaying the stations ID's, a flag showing the water quality condition, and information about sites under advisement. Planned rollout for the site is June 2009.

E. Region Activities

Region 6: At the end of the 2007 sampling season, the beach monitoring program in Region 6 used a rain model for posting advisories at Tier I beaches. Over the winter 2007-2008, Sean Torrens, Regional Coordinator for Region 6, evaluated the rain model and sampling protocol. In

the 2008 season, the rain model was used to assist with advisory postings. Additional rain event sampling was done as needed, especially after tropical storms. In 2009, the rain model will be relied on more heavily for issuance of advisories.

The US EPA is conducting two simultaneous studies at Surfside Beach between June and September 2009. The first study led by Marirosa Molina and Richard Zepp involves analyzing samples by a rapid bacteria detection method. The second study led by Elizabeth Sams and Tim Wade has contracted staff interviewing beachgoers about their use of the beach and follow-up interviews about their health after their time at the beach. This EPI study will also follow the June to September time frame. The Town of Surfside Beach has agreed to the studies and has made progress on its own.

Over \$1,000,000 was spent dredging five of the six lakes in the Town of Surfside Beach. Once the six to eight feet of sediment was removed, the artesian water could rise again and help clean the lakes and the runoff to the ocean. The Town Administrator, Ed Booth, is also working with citizens to stop feeding geese. This should help remove the geese from the area thus allowing the ponds to remain cleaner.

Sean Torrens had an idea to create interest in the public notification program and to utilize the promotional items purchased last fall. Sean has created 4 geocaching sites in Horry and Georgetown Counties. The Web addresses are listed below along with the street address. The Web site explains our program, that the cache has one or more of our promotional items, and if someone goes to all 4 sites, Sean will send them one of our Stay Well in the Water tote bags. Elizabeth Cheney in Georgia has used this idea and created interest in the park where her caches are hidden. We hope to achieve the same result.

WAC-004 – 16th Ave. N, North Myrtle Beach:

http://www.geocaching.com/seek/cache_details.aspx?guid=a702aac8-0176-41db-a8ea-e5dfd615453e

WAC-019 34th Ave.N, Myrtle Beach:

http://www.geocaching.com/seek/cache_details.aspx?guid=b15127c0-f936-458b-8378-379e12d1d495

WAC-034 8th Ave. S, Surfside Beach:

http://www.geocaching.com/seek/cache_details.aspx?guid=dc8459be-db6c-4a10-b68d-b65f4d68c5a5

WAC-041 Songbird Lane, Litchfield:

http://www.geocaching.com/seek/cache_details.aspx?guid=ac2e3b45-24f5-496d-8caa-05c0e214d5e9

Horry County Stormwater management has installed permanent advisory signs at several (or all) of our sample locations on non-incorporated beach - which includes White Point Swash. These advisory signs warn of high bacteria levels following rainfall (high flow) events. These are relatively new and are more prominent. Overall, more stormwater pipes have permanent advisory signs compared to past years. This effort is more protective of public health and works well with their other projects discussed below.



Stormwater outfall pipe at Ocean Lakes Campgrounds.

Horry County has undertaken some projects to improve the water quality and the aesthetics of the beaches along the campgrounds. An Ultraviolet light system was installed in Beaver Dam Creek to kill the bacteria before it flowed out onto the beach and into the ocean. The system installation was completed in March 2009; sampling begins in April 2009.



Each tube contains 4 lamps.



Another project has been started in Ocean Lakes Campgrounds. Stormwater pipes going to the beach will be capped at the dune line. The east side of the road shown in the photo below is being removed, and a new stormwater infiltration system is being installed. Stormwater will be directed into the sand below the road instead of into the pipes. This project is scheduled for completion by Memorial Day 2009.



Region 7 No changes to stations or processes.

Region 8: The advisory at Hunting Island has been lifted. The sampling station will remain in the same location for 2009.

The Town of Hilton Head Island has agreed to sample again this year. Their contractor brings the samples to DHEC's region lab for analysis.

DHEC's new advisory signs have been delivered to the Town Administrator of Edisto Beach. The Town will post any advisories using the new signs. She will also receive 60 sets of our promotional items for distribution this summer.

D. Projects

The strategic plan for beach monitoring is included in Appendix E with updates in italics.

IV. Financial Update for 2009 Grant Application

Budgeted

Personnel	\$167,877
Fringe 32%	\$ 53,721
EQC Rate	\$ 29,076
Equipment	\$ 3,000
Travel	\$ 7,500
Supplies	\$ 7,455
Indirect	<u>\$ 28,371</u>
Total	<u>\$297,000</u>

Appendix A

You are cordially invited to an upcoming South Carolina Ocean and Coastal Monitoring Workshop, hosted by the SCDHEC Office of Ocean and Coastal Resource Management, SC Sea Grant Consortium, and the Southeast Coastal Ocean Observing Regional Association (SECOORA). The Workshop will take place at the SCDNR MRRI Auditorium in Charleston, SC, on April 27, 2009 from 9:00 AM to 3:30 PM.

The goal of this workshop is to discuss past and ongoing coastal and ocean monitoring efforts in South Carolina waters, identify gaps and priorities, and explore any opportunities for improved coordination of efforts or this workshop we are defining ocean monitoring to include long-term, periodic, quantitative measurements and analyses of marine-related variables (biological, chemical, and physical) with a focus on the beach/surf zone to the offshore extent of state waters. Presentations in the morning session will provide an overview of previous and ongoing coastal and ocean monitoring efforts in SC. The afternoon session will involve a facilitated discussion of data gaps and priorities for ocean monitoring in South Carolina.

Appendix B

OCEAN BEACHES ROUTINE ON-SITE SANITARY SURVEY

Name of Beach:

Date and Time of Survey:

Sampling Station(s) / ID:

Surveyor Name(s):

PART I – GENERAL BEACH CONDITIONS

Air Temperature: _____ °C or °F

Rainfall: ☐ <24 hours ☐ <48 hours ☐ <72 hours since last rain event and _____ Inches

Longshore current direction (S or 180°): _____ Wave Height: _____ ft Estimated

Hurricane / Tropical Storm - Dates: _____

Moon Phase _____

Comments/Observations _____

PART II – WATER QUALITY

Bacteria Sample Results

Type	E.	<i>Enterococcus</i>	Results:
Concentration (CFU/100 mL)			Water Temperature: _____ °C
Turbidity: <input type="checkbox"/> Slightly <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque or NTU: _____			<input type="checkbox"/> Clear

Comments/Observations (rocks, dead marsh grass, tide state) _____

PART III – BATHER LOAD

Total number of people at the beach: _____

Total number of people in the water: _____

Comments/Observations _____

PART IV – POTENTIAL POLLUTION SOURCES

Sources of Discharge:

Type	River(s)	Pond(s)	Wetland(s)	Outfall(s)	Other (specify):
Name(s) of Source(s)					
Characteristics					
Type	Swash	Inlet			
Name(s) of Source(s)					
Characteristics					

Floatables present: ☐ yes ☐ no

Describe type and amount

Amount of Beach Debris/Litter on Beach: ☐ None ☐ Low (1-20%) ☐ Moderate (21-50%) ☐ High (>50%)

Type of Debris/Litter Found: ☐ Tar ☐ Oil/Grease ☐ Trash ☐ Plastic ☐ Medical Waste

☐ Other (describe) _____

Presence of Wildlife and Domestic Animals	Geese	Gulls	Dogs	Other (specify):
Number				

Comments/Observations (continue on back if necessary): _____

Appendix C

IMMEDIATE RELEASE

May 4, 2009

Ocean water quality monitoring begins May 15

COLUMBIA – May 15 will mark the sixth summer that the S.C. Department of Health and Environmental Control has sampled the state's ocean water quality under the U.S. Environmental Protection Agency's BEACH Act, DHEC announced today.

"The BEACH Act authorizes the U.S. Environmental Protection Agency to award grants to states, tribes and territories to implement beach water quality monitoring programs at coastal and Great Lakes recreational beaches," said Shannon Berry, beach monitoring coordinator in DHEC's Bureau of Water. "These grants also support programs to inform the public about the risk of exposure to disease-causing microorganisms in the waters at beaches. South Carolina is one of 35 states receiving the EPA grant.

"DHEC monitors the quality of water at the state's beaches every year. When bacteria levels in the water are too high, the public is notified of beach advisories," Berry said. "Signs, written in both English and Spanish, are placed on the beach until water quality returns to acceptable levels."

Berry said swimming advisory information is available on DHEC's Web site at:
<http://www.scdhec.gov/beach>.

According to Berry, the town of Surfside Beach is hosting the EPA's study of rapid testing methods. Beachgoers who are interviewed by the EPA contractor staff will receive a gift when leaving the beach and, after a follow-up interview, a check for \$25.

"This study will help the EPA find faster analytical methods to test the ocean water samples taken in the surf," Berry said. "These studies will begin in early June, and conclude after Labor Day. We advise beach-goers to look for the survey tents, especially on weekends."

Berry urges people to help enhance beach water quality by following these reminders:

Do not swim or allow children to play in swashes or near stormwater pipes. These areas are more likely to have high bacteria levels.

Do not swim in the ocean during, or immediately after heavy rain.

Avoid swimming in areas under advisory. Walking, wading, and collecting shells is safe unless you have open sores or lesions. Bacteria can get into open sores and cause infection.

Bring sunscreen.

If the beach allows pets, please clean up after them. Stay Well in the Water. Remove all items you bring to the beach with you.

For more information about beach monitoring, contact Berry at (803) 898-3541, or e-mail her at:
berrysk@dhec.sc.gov.

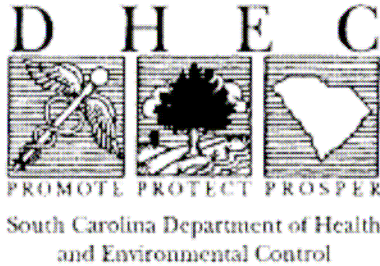
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For more information:

Adam Myrick – (803) 898-3884

E-mail – myrickar@dhec.sc.gov

MNR0303



NEWS RELEASE

Division of Media Relations
2600 Bull Street
Columbia, S.C. 29201
(803) 898-3886
<http://www.scdhec.gov/news>

FOR IMMEDIATE RELEASE

Month date, year

Swimming advisory issued for a section of insert location here

COLUMBIA – A swimming advisory has been issued for a section of insert location here, the S.C. Department of Health and Environmental Control announced today.

“The affected area includes 200 feet above and below the beach access at insert monitoring location here,” said insert your name here of DHEC’s Region 6, 7 or 8 Environmental Quality Control office. “High bacteria levels have been detected in this section of the beach, and swimming is not advised until bacteria levels return to normal.”

For more information about beach water quality, see <http://www.earth911.org>, or call DHEC’s Region 6, 7 or 8 Environmental Quality Control office at insert your office’s (area code) phone-number here.

-###-

For more information:

Your Name – (area code) phone-number
E-mail – youremailaddress@dhec.sc.gov

Adam Myrick – (803) 898-3884
E-mail – myrickar@dhec.sc.gov

Appendix E

Strategic Plan – Beach Monitoring 2006-2011

2006-2007

- ❑ Winter Add station at Atlantic Beach, revise stations at Fripp Island, evaluate Hilton Head for Tier I status, delete marinas from Tier III status, implement chain of custody process, determine methodology for 303d list for ocean water quality – *I was not able to delete the marinas from Tier III but an understanding of their status was reached with EPA. Atlantic Beach declined our offer to add a station there.*
- ❑ Spring Re-apply for Beach Grant which expires 12/31/07 – be sure all spending is finalized for the end of the current grant period, send out letters for mini-grant applications - *Complete*
- ❑ Summer Sampling and notifications, input data, document changes to stations. *Sampling is complete and all has been submitted to EPA.*
- ❑ Fall Close out mini-grants, end of season meeting. *The Town of Hilton Head Island has submitted their report as of 11/9/07.*

2007-2008

- ❑ Winter
 - Create rain model based on 5 years of Beach Grant data and begin precautionary advisory posting based on the model, discuss the need for mini-grants. *The rain model was used successfully.*
 - The program is proposing to discontinue offering mini-grants and to assume all sampling in-house. If we make this decision, we will need to re-write the QAPP and our SOPs. *We no longer offer mini-grants for sampling. We have funded a mini-grant for notification. The QAPP has been revised.*
 - Study Withers Swash and the swash system at Pirateland to try to determine a point source. *On-going. We'll need more rain for the study to be successful.*
 - Working with the 303d staff on sampling protocols for the 303d listing. *Complete.*
 - Shannon will work with Rheta Geddings, BoW's liaison with OCRM to develop a closer working relationship between the beach monitoring program and OCRM. SC DHEC's Art Department is working on a Stay Well in the Water promotional campaign. We should have some items to look at the November 29th meeting in Region 7. *Complete.*
 - Pirateland Campground requested we change the name of station WAC-028 from Pirateland to Beaver Dam Creek. *Complete..*
- ❑ Spring Begin the mini-grant application and review process if needed. *Complete.*
- ❑ Summer Sampling and notifications, input data, take pictures and make notations for sampling station book on new or revised station locations, document changes. *Some pictures of sampling stations were taken in April. See examples below.*



Fripp at low tide LC-092



Hunting Island after renourishment



TRI-057



After

Folly Beach



Before

- ❑ Fall Close out mini-grants, end of season meeting, verify data for upload to EPA. *Completed on time.*

2008-2009

- ❑ Winter Evaluate rain model data, revise model as necessary, update station manual and sampling protocol. Have end of season meeting with beach program staff and pre-season meeting with OCRM group. *End of season meeting was held November 6, 2008. The agenda for the meeting is in Appendix F. A summary e-mail was sent to Region IV EPA Nov. 10th. A meeting was held with Dr. Dwayne Porter of USC about the rain model project Nov. 12th. Another outcome of this meeting is a pledge from DHEC's Information Systems Director to simplify the data input for our beach monitoring and shellfish sanitation data. This project will allow Regional staff to input data directly into LIMS and EFIS from a Web based program.*
- ❑ Spring Begin using the Web based data entry program. Re-evaluate station locations in Region 8. *All stations in all regions will remain unchanged for the 2009 beach season.* Determine areas for sanitary surveys. *This list is shown in section C. Data.* Produce 2008 report for the Web prior to May. *This report was placed on our Web site in December of 2008.*
- ❑ Summer Sample, notify, collect data. Perform Sanitary Survey's in each Region. Work with EPA's EPI and rapid testing methods teams at Surfside Beach.
- ❑ Fall End of season meeting, verify data for upload to EPA. Evaluate the season.

2009-2010

- ❑ Winter Work with OCRM on beach status – erosion, accretion. Include additional stations and beaches in routine sanitary surveys and add annual sanitary survey for every beach.

Appendix E

**OCEAN WATER QUALITY MONITORING
END OF SEASON MEETING
NOVEMBER 6, 2008
EQC Region 7 Conference Room
10:00am to 1:00pm**

Agenda

Welcome and introductions	Berry
REGION REPORTS	
Region 6	Torrens / King
Region 7	Reilly
Region 8	Payne
Columbia	Berry
Web Site update	
Advisory signs	
Spending	
Promotional items	
Web Survey	Wix
EPA	Hansel
2009 Plans	All
Sanitary surveys (report from GLBA)	
Week long sampling idea	
Tier 3 sampling – Daufuskie example	
Promotional grants / ideas? - samples	
Follow-up to web survey	
Lunch	